

IN THE CLAIMS

Please amend Claims 1, 3, 4, 8-10 and 14-16 to read as follows.

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1. (Currently Amended) A liquid discharging head comprising:

a pair of substrates connected in a laminated state;

a plurality of liquid channels formed on a connected surface of one of said pair of substrates;

a plurality of driving elements, each formed at a predetermined position above a corresponding one of said plurality of liquid channels; and

orifices, each communicating with a distal end of a corresponding one of said plurality of liquid channels,

wherein a liquid is discharged from each of said orifices by an operation of a corresponding one of said plurality of driving elements, and

wherein a face surface, serving as an outer surface of a member including said orifices, is coated with a ~~water-repellent~~ water-repellent material having a ~~superhydrophobic~~ an ultrahigh water-repellent property.

2. (Original) A liquid discharging head according to Claim 1, wherein each of said plurality of driving elements is a heating element for generating thermal energy, and wherein the liquid within each of said plurality of liquid channels is boiled by a corresponding one of said heating elements to generate a bubble in the liquid, and the liquid is discharged from

a corresponding one of said orifices due to a pressure generated during the generation of the bubble.

3. (Currently Amended) A liquid discharging head according to Claim 1, wherein a contact angle made by the water-repellent material having the ~~superhydrophobic~~ ultrahigh water-repellent property and the liquid is at least 150 degrees.

4. (Currently Amended) A liquid discharging head according to Claim 1, wherein the water-repellent material having the ~~superhydrophobic~~ ultrahigh water-repellent property contains fluoroalkylmethoxysilane.

5. (Original) A liquid discharging apparatus comprising a liquid discharging head according to any one of Claims 1 through 4.

6. (Previously Amended) A liquid discharging apparatus comprising a liquid discharging head according to any one of Claims 1 through 4, and a cleaning member for removing contamination adhering to said face surface serving as said outer surface of said member where said orifices are formed.

7. (Previously Amended) A liquid discharging apparatus according to Claim 6, wherein said cleaning member comprises a polyurethane rubber elastic member, and wherein

a water-repellent film is formed on a surface of said cleaning member contacting said face surface.

8. (Currently Amended) A liquid discharging head comprising:

discharging ports for discharging a liquid;

liquid channels communicating with corresponding ones of said discharging ports;

heating elements, each formed at a predetermined position above a corresponding one of said liquid channels; and

a supply port for supplying said liquid channels with the liquid,

wherein the liquid within each of said liquid channels is boiled by a corresponding one of said heating elements to generate a bubble, and the liquid is discharged from a corresponding one of said discharging ports due to a pressure generated during the generation of the bubble, and

wherein a face surface, serving as an outer surface of a member for forming said discharging ports, is coated with a ~~water-repellent~~ water-repellent material having a ~~superhydrophobic~~ an ultrahigh water-repellent property.

9. (Currently Amended) A liquid discharging head according to Claim 8, wherein a contact angle made by the water-repellent material having the ~~superhydrophobic~~ ultrahigh water-repellent property and the liquid is at least 150 degrees.

10. (Currently Amended) A liquid discharging head according to Claim 8, wherein the water-repellent material having the ~~superhydrophobic~~ ultrahigh water-repellent property contains fluoroalkylmethoxysilane.

11. (Original) A liquid discharging apparatus comprising a liquid discharging head according to any one of Claims 8 through 10.

12. (Previously Amended) A liquid discharging apparatus comprising a liquid discharging head according to any one of Claims 8 through 10, and a cleaning member for removing contamination adhering to said face surface serving as said outer surface of said member where said discharging ports are formed.

13. (Previously Amended) A liquid discharging apparatus according to Claim 12, wherein said cleaning member comprises a polyurethane rubber elastic member, and wherein a water-repellent film is formed on a surface of said cleaning member contacting said face surface.

14. (Currently Amended) A method for manufacturing a liquid discharging head, said method comprising the steps of:

forming a plurality of driving elements on a surface of at least one of a pair of substrates;

forming a plurality of liquid channels so as to correspond to the plurality of driving elements;

connecting the pair of substrates so as to provide a laminated state in which a surface where the plurality of liquid channels are formed is a connecting surface;

forming a member for forming orifices at a distal end of at least one of the connected substrates;

coating a face surface, serving as an outer surface of the member, with a ~~water repellent~~ water-repellent material having a ~~superhydrophobic~~ an ultrahigh water-repellent property; and

causing the orifices to communicate with corresponding ones of the liquid channels.

15. (Currently Amended) A method for manufacturing a liquid discharging head, said method comprising the steps of:

forming an element substrate made of silicon on a surface of at least one of a pair of substrates;

forming a plurality of heating elements for generating thermal energy on the element substrate;

forming a plurality of liquid channels corresponding to the plurality of heating elements;

connecting the pair of substrates so as to provide a laminated state in which a surface where the plurality of liquid channels are formed is a connecting surface;

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forming a member for forming orifices at a distal end of at least one of the pair of connected substrates;

coating a face surface, serving as an outer surface of the member, with a ~~water repellent~~ water-repellent material having a ~~superhydrophobic~~ an ultrahigh water-repellent property; and

causing the orifices to communicate with corresponding ones of the liquid channels.

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16. (Currently Amended) A method for manufacturing a liquid discharging head, said method comprising the steps of:

forming heating elements for generating thermal energy on an element substrate made of silicon;

forming liquid channels corresponding to the heating elements;

forming a supply port for supplying the liquid channels with a liquid;

forming a member on which discharging ports for discharging the liquid are to be formed;

coating the member with a ~~water repellent~~ water-repellent material having a ~~superhydrophobic~~ an ultrahigh water-repellent property; and

forming the discharging ports in the coated member.

17. (Previously Amended) A method according to any one of Claims 14 through 16, wherein said coating step is performed according to a film forming method using a chemical vapor reaction or a radical polymerization reaction.

18. (Previously Amended) A method according to any one of Claims 14 through 16, wherein heat treatment at 150° C is performed after said coating step.

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